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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/526,930	03/16/2000	Timothy M. Schmidt	TI-30734	1461

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EXAMINER	
KIM, KEVIN	

ART UNIT	PAPER NUMBER
2638	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/526,930	SCHMIDT ET AL.	
	Examiner	Art Unit	
	Kevin Y. Kim	2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2005*.

2a)☒ This action is **FINAL**.. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22 and 28-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-11,28-38,40 and 41* is/are allowed.

6)☒ Claim(s) *1-4,6,7,12-22,42-47* is/are rejected.

7)☒ Claim(s) *5 and 39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8-8-2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on July 28, 2005 have been fully considered but they are not persuasive. Applicant merely asserts that the prior art cited against the claims "do not disclose the step of phase shifting a plurality of data communication signals from a respective plurality of channels" and "do not disclose transmitting derived versions of each data communication signal from the plurality of channels to respective antennas." In order to overcome the rejection, more detailed discussion of why the cited features of the prior art reference fails to read on the claimed limitations. In other words, applicant must also discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1-4,6,7,12-22,42-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Rshid-Farrokhi et al (US 6,400,780, previously cited).

Claim 1.

Rshid-Farrokhi et al discloses a method of communication between a transmitter (101) having a plurality of antennas (105) and at least on receiver (103), comprising

phase shifting a plurality of data communication signals (IN) from a plurality of a respective plurality of channels to generate derived versions of each channel communication signal, each derived version having its desired data communication signal phase shift, in that

weights (W) (which is a combination of amplitude scaling and phase adjustment as known in the art) are applied at multipliers (113),

transmitting the derived versions of each data communication signal to respective antenna within the plurality of antennas (105-1,..., 105-k); and

providing a distinct delay (117) associated with each derived version of the channel communication signal and its respective antenna.

Claim 2.

Rshid-Farrokhi et al discloses receiving at the transmitter, data communication uplink signals, i.e., feedback, (FEEDBACK CHANNEL) from each remote receiver in communication with the transmitter and estimating a path profile associated with each received uplink signal. See col.5, lines 45-56.

Claim 3.

Rshid-Farrokhi et al discloses determining a distinct communication signal delay associated with each channel of the plurality of communication channels, wherein each communication signal delay is derived from data associated with the respective uplink signal. See col.3, lines 47-60.

Claim 4.

Rshid-Farrokhi et al discloses applying weight vectors to a transmit signal, wherein the weight vector performs "amplitude scaling" as well as phase adjustment.

Claim 6.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 7.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claim 12.

Rshid-Farrokhi et al discloses a communication system comprising:

a transmitter (101) having a plurality of spaced apart antennas (105-1,...105-k);

a channel measurement circuit (167,121) coupled to the plurality of spaced apart antennas and arranged to produce a path profile estimate in response to a signal from a remote transmitter,

a channel input terminal coupled to receive a data communication signal (IN),

a delay circuit (117) operatively coupled between the channel input terminal and the plurality of spaced apart antennas for providing a distinct delay to the data communication signal in response to the path profile estimate.

Claim 13.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 14.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claims 15,16 and 17.

Rshid-Farrokhi et al discloses that the channel measurement circuit (167,121) is configured to apply weight vectors to a transmit signal (the weight vector includes both phase shift and amplitude scaling).

Claim 18.

Rshid-Farrokhi et al discloses a data communication system comprising,.

a transmitter (101) having a plurality of spaced apart antennas (105-1,...105-k) suitable for communication with at least one remote receiver (103),

an element (113) for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas, and

a delay element (117) for providing a distinct delay associated with each antenna and configured to alter the distinct delay in response to a change of a path profile associated with the transmitter channel.

Claim 19.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 20.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claims 21 and 22.

Rshid-Farrokhi et al discloses applying weight vectors to a transmit signal, wherein the weight vector includes both phase shift and amplitude scaling.

Claim 42.

Rshid-Farrokhi et al discloses a data communication system comprising,

a transmitter (101) having a plurality of spaced apart antennas (105-1,..105,k) suitable for communication with at least one remote receiver (103),

a phase shifting element (113) for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas, wherein the meansfor providing a derived version of each communication signal is configured to phase shift a communication signal transmitted from the transmitter to the plurality of spaced apart antennas, note that applying weight vectors to a transmit signal controls the phase; and

a delay element (117) for providing a distinct delay in response to a signal from the at least one remote receiver.

Claim 43.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 44.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claim 45.

Rshid-Farrokhi et al discloses a data communication system comprising:

a transmitter (101) having a plurality of spaced apart antennas (105-1,..105-k) suitable for communication with at least one remote receiver (103);

s multiplier element (113) for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas, wherein the element is configured to amplitude scale the communication signal (applying weight vectors to a transmit signal scales the amplitude as well as controls the phase); and

a delay element (117) for providing a distinct delay associated with each antenna in response to a signal from the at least one remote receiver.

Claim 46.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 47.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Allowable Subject Matter

4. Claims 5 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 8-11,28-38,40 and 41 are allowed.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk

K. Kim
10/12/05

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER